

Var. **vestitus**, var. nov., a forma typica differt lemmatibus villosi-hirsutis.

Differs from the typical form in the villous-hirsute lemmas.— Apparently very common: New Brunswick (introduced) and Maine (introduced) to Delaware, westward to Oregon, southward in the Mississippi Valley to Missouri, and southwest to Arizona. TYPE (in Herb. N. Y. State Col. Agric., Ithaca): dry ground, Cedar Point, Erie County, Ohio, July 17, 1914, *L. H. MacDaniels*, no. 106.

The *E. canadensis*, forma *crescendus* Ramaley, Bull. Geol. & Nat. Hist. Survey Minn. 9, p. 114 (1894) and the *E. crescendus* Wheeler, Minn. Bot. Stud. iii. 106 (1903) were probably based on material which is here included in the variety *vestitus*, but since they were based on size, not on pubescence of the lemmas, and since the name has not been used as a varietal name, it seems best not to take up one so inappropriate for our present variety. Certain specimens from Minnesota and the Dakotas have hairy leaves and sheaths, and may be the *E. canadensis* var. *villosus* Bates, Amer. Botanist, xx. 17, (1914). In some of the specimens from the Northwest the glumes are unusually narrow.

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ROSA BLANDA AND ITS ALLIES OF NORTHERN MAINE AND ADJACENT CANADA.

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THE region of Silurian, Cambrian and Lower Carboniferous limestones and calcareous slates and sandstones extending from northern Maine to the St. Lawrence and across northern New Brunswick to the Gaspé Peninsula and Anticosti is strongly differentiated from the coastwise district of southern Maine, southeastern New Brunswick, and Nova Scotia, where the soils are chiefly derived from acid or at most only slightly calcareous rocks. Hundreds of species are known from the St. John Valley in Maine and New Brunswick and from Rimouski Co., Quebec, to Gaspé and Anticosti which are quite absent from the acid soils to the south and southeast; and almost every group of plants, when critically studied, furnishes striking cases of this differentiation.

In the genus *Rosa* this segregation along lithological lines is as pronounced as in other genera, with the result that in the acid or hardly calcareous coastwise region from southern New England to northeastern New Brunswick, the Magdalen Islands and southern Newfoundland *Rosa virginiana* L. and *R. carolina* L.¹ (*R. humilis* Marsh.) abound in the drier habitats and *R. nitida* Willd. in the bogs; while swamps and pond-shores northward to Megantic Co., Quebec, north-central Maine, and southwestern New Brunswick are often characterized by the abundance of *R. palustris* Marsh. (*R. carolina* Auth., see foot-note 1). In these four species of southern arid habitats the infrastipular prickles are normally present, the pedicels, hypanthiums and hips more or less bristly, and the achenes are borne at the base of the hip.

In the calcareous area to the north and northwest, however, from the St. John valley in Maine to Gaspé and Anticosti, these species are practically unknown (with the exception of rare colonies of *R. nitida* in sphagnous bogs and local colonies of *R. virginiana* in the Devonian sandstones about Gaspé Bay) and their places are taken by three species of quite different character; without infrastipular prickles, with glabrous pedicels, hypanthiums and hips, and with the achenes borne on the inner walls as well as at the base of the hips. These three northern calcicolous shrubs have all passed as *R. blanda* Ait., and since there is some question as to the exact identity of *R. blanda* it is necessary first to consider the original description of that species.

Rosa blanda Ait. Hort. Kew. ii. 202 (1789) was based upon two entirely different plants, which were very soon recognized by other botanists as belonging to quite distinct species. Aiton's treatment was as follows:

¹ *Rosa carolina* L. Sp. Pl. i. 492 (1753) was based solely on *Rosa Carolina fragrans, foliis mediolenus serratis* of Dillenius, Hort. Elth. 325, t. 245, fig. 316 (1732). The figure of Dillenius is beautifully definite and there can be no question that it clearly depicts the common 1-flowered glabrous-leaved *R. humilis* Marsh. with slender straight needle-like infrastipular prickles. Not merely the plate demonstrates this, but the description of the shrub as not exceeding a foot in height and having glabrous leaves is equally definite. The taller swamp species with strongly curved prickles, more corymbed flowers and usually pubescent finer-toothed leaves which has generally passed as *R. carolina* was taken up by Linnaeus as *R. carolina* in the 2d edition of the *Species Plantarum* (1762-63), and the significance of the name thus changed. This accounts for the subsequent very general treatment of the Swamp Rose as *R. carolina*. Dr. Rydberg informs me that the correct name of the Swamp Rose (*R. carolina* of Authors) is *R. palustris* Marsh. Arb. Am. 135 (1785). Marshall's description is characteristically vague but it apparently was intended to cover the *R. carolina* of Authors and the name *R. palustris* is certainly appropriate.

"*blanda*. 3. *R. germinibus globosis glabris, caulibus adultis pedunculisque laevibus inermibus.*

Hudson's Bay Rose.

Nat. of Newfoundland and Hudson's-bay.

Cult. 1773, by Mr. James Gordon.

Fl. May–August.

H. h.

DESCR. *Caules* adulti laeves, inermes; juniores seu primi anni aculeis rectis subreflexis tenuibus armati. *Rami* teretes, inermes, nitidi, rubicundi. *Folia* pinnata: *foliola* plerumque septem, oblonga, argute et subaequaliter serrata, glabra. *Petioli* glabri, plerumque una alterave spinula armati."

In view of the fact that no wild rose is yet known from Newfoundland with the pubescent foliage, connivent sepals (in fruit) and parietal achenes which are so characteristic of *R. blanda* as commonly interpreted (*R. Solandri* Tratt.¹), the writer supplied Dr. S. F. Blake when in London with a series of typical specimens of the various plants of eastern America which might have been involved in Aiton's *R. blanda*. From Dr. Blake's examination of the original specimens and their history it appears that Aiton had before him two entirely different roses: (1) a specimen from Hudson Bay, 1773, which, as stated in Dr. Blake's letter, "is true *R. blanda* as now generally understood, with tomentulose petioles, etc., and perfectly smooth calyx-tube"; and (2) a specimen collected by Banks from near St. John's, Newfoundland, a branch with over-ripe fruit bearing glandular bristles at the top but with the sepals fallen, which Dr. Blake writes "is certainly *R. virginiana* Miller (Crépin has written on it 'verus *R. lucida*')." Prior to Aiton's publication these two specimens had been written up, but not published, by Solander as different varieties of a manuscript *Rosa blanda*, the Newfoundland shrub as *R. blanda* α , the Hudson Bay shrub as *R. blanda* β . Examination of Solander's manuscript shows that in this, as in many other cases, the descriptions in *Hortus Kewensis* were derived with only minor changes from the Solander manuscript; but Aiton in the publication, which alone must be considered in settling the nomenclatorial type of *R. blanda*, took the Hudson Bay shrub as the primary portion of the species, making the Newfoundland shrub and the description of it supplementary. Thus the diagnosis "*R. germinibus globosis, caulibus adultis pedunculisque laevibus inermibus*" clearly describes the Hudson

¹ Tratt. Ros. Mon. ii. 150 (1823).

Bay shrub with its glabrous peduncles (or pedicels) and fruit and unarmed stem. In this diagnosis alone did Aiton describe the peduncles and fruit, the supplementary description containing no mention of them. This second description was taken almost without change from the Solander manuscript description of Banks's Newfoundland shrub (*R. virginiana* Mill.), which has glandular-bristly fruit and glabrous foliage, with the petioles frequently spinulose-armed.

It has generally been conceded that the Hudson Bay shrub with glabrous fruit and peduncles is the type of *R. blanda*, but recently some American publications have taken up *R. Solandri* Tratt., based upon the same Hudson Bay specimen as type, and have treated the Newfoundland specimen as the type of *R. blanda*. It should be clear, however, since Aiton's primary diagnosis, in which alone the fruit is described, applies definitely to the Hudson Bay plant, and since he called his species unequivocally the "Hudson's Bay Rose," that he had primarily in mind the Hudson Bay shrub, which he says was cultivated by Mr. James Gordon in 1773. The confusion with the "Hudson's Bay Rose" of material with over-ripe fruit from Newfoundland was natural; but, since the Newfoundland shrub described, without mention of its bristly fruit, in the last paragraph, proves to have been a somewhat uncharacteristic specimen of the earlier-published *R. virginiana*, a common species of southeastern Newfoundland, it would be a suppression of Aiton's obvious intent to urge that, because in the third paragraph "Newfoundland" precedes "Hudson's-bay," Aiton's *R. blanda*, the "Hudson's Bay Rose," with glabrous fruits must be made to rest upon the Newfoundland specimen with bristly fruit as type.

The specific name *blanda*, too, is highly appropriate for a species with smooth fruits, smooth peduncles and unarmed petioles and flowering branches, but it would be peculiarly inappropriate for a shrub with bristly fruits and peduncles, spinulose petioles and rachises, and young stems, as Aiton described the Newfoundland shrub, "aculeis rectis subreflexis tenuibus armati." Although it is possible to argue: "What's in a name? That which we call *Rosa blanda* by the name *Rosa Solandri* would be more clear," it seems sufficiently obvious that Aiton meant by the "Hudson's Bay Rose" the rose which he diagnosed from Hudson Bay and that the name *Rosa blanda* is correctly retained for that species.

Rosa blanda has the sepals persistent and becoming strongly con-

nivent in fruit, forming a beak-like summit to the hips, a character shared with *R. acicularis* Lindl. and other species which occur west of our area. *R. blanda* is a common rose of the river-thickets from northern Maine to the St. Lawrence and Anticosti, but associated with it on the gravels of the St. John River and its tributaries in Maine and New Brunswick is another shrub which, like *R. blanda*, is without infrastipular prickles on the flowering stems and also has glabrous hypanthium and fruit and parietal achenes but the leaves as glabrous as in *R. virginiana* and the sepals as reflexed in mature fruit as in the latter species. In other words, this shrub, which abounds on the calcareous gravels of the St. John River, shares many traits of *R. blanda* and others of *R. virginiana*, yet is thoroughly distinct from either. That it is not a hybrid occurring along the borders of the ranges of *R. blanda* and *R. virginiana* is apparent from the fact that it occurs entirely outside the range of the latter species. So characteristic is this shrub of the St. John Valley that it may appropriately be called

ROSA johannensis, n. sp., caulibus 0.3–1 m. altis, adultis inermibus vel imis setosis rufescentibus, junioribus plus minusve setosis vel rare aculeatis, aculeis rectis basi dilatis; ramulis inermibus glabris lucidis plerumque purpurascens; stipulis dilatatis adnatis 1.5–3 cm. longis glabris ciliatis plus minusve glanduloso-dentatis, laminis liberis lanceolato-ovatis; petiolis rhachibusque glabris vel sparsissime pilosis glabratisque inermibus; foliolis 5–9 plerumque 7 ovalibus vel anguste obovatis argute serratis supra sublucidis subtus pallidis glabris vel subtus ad venas sparse pilosis 1.5–5.5 cm. longis; floribus solitariis vel corymbosis; pedicellis 1–3 cm. longis glabris; hypanthio glabro subgloboso supra non attenuato basi rotundato in anthesi 5–9 cm. diametro; fructibus oblato-globosis aurantiaco-rubris 1–1.5 cm. diametro; sepalis plus minusve glandulosis lanceolato-ovatis caudato-appendiculatis sub anthesin divergentibus vel reflexis persistentibus, laminis 0.9–1.4 cm. longis appendiculo 1.2–2 cm. longo; petalis roseo-purpureis 2.5–3.5 cm. longis; stylis distinctis persistentibus non exsertis; achaeniis basilaribus parietalibusque.

Stems 0.3–1 m. high; the adult unarmed or at base setose, reddish; the young more or less setose or rarely prickly, with straight broad-based prickles; branchlets unarmed, glabrous, shining, usually purplish: stipules dilated, adnate, 1.5–3 cm. long, glabrous except at the ciliate margin, more or less glandular-dentate; the free blades lance-ovate: petioles and rhachis glabrous or very sparsely pilose and becoming glabrate, unarmed: leaflets 5–9, usually 7, oval or narrowly obovate, coarsely serrate, somewhat shining above, pale beneath, glabrous or sparsely pilose on the nerves beneath, 1.5–5.5 cm. long:

flowers solitary or corymbed: pedicels 1–3 cm. long, glabrous: hypanthium glabrous, subglobose, not attenuate above, rounded at base, in anthesis 5–9 mm. in diameter: fruit oblate-globose, orange-red, 1–1.5 cm. in diameter: sepals more or less glandular, lance-ovate, caudate-appendiculate, after anthesis divergent or reflexed, persistent; the blades 0.9–1.4 cm. long; the appendage 1.2–4 cm. long; petals rose-purple, 2.5–3.5 cm. long: styles distinct, persistent, not exerted: achenes borne at the base and on the walls of the hypanthium.—Valley of the St. John River and tributaries, New Brunswick and Maine. NEW BRUNSWICK: river-gravels and shingly border of thicket by the St. John River, Woodstock, July 14, 1916, *Fernald & Long*, no. 13,925. MAINE: wet gravelly banks of the St. John between the Great Black and Little Black Rivers, July 27, 1917, *Harold St. John*; St. Francis, 1881, *Kate Furbish*; gravelly shores, Fort Kent, 1881, *Kate Furbish*, September 21, 1899, *Fernald*; Winding Ledges, Fort Kent, July 23, 1900, *E. F. Williams*; gravelly shore of the St. John, Van Buren, September 11, 1899, *Fernald* (TYPE in Gray Herb.); gravel-beach of Aroostook River, Fort Fairfield, August 10, 1909, *Fernald*, no. 1949.

Forma **albina**, n. f., petalis albis.—With the typical form, Woodstock, NEW BRUNSWICK, July 14, 1916, *Fernald & Long*, no. 13,926 (TYPE in Gray Herb.).

Distinguished from *R. blanda*, with which it hybridizes, by its glabrous darker-green leaves and the widely divergent or reflexed mature sepals; from *R. virginiana* by the lack of infrastipular prickles, the glabrous pedicels and hypanthiums, and parietal as well as basal achenes.

The other rose is a more northern shrub of calcareous ledges and thus far known only from Bic in Rimouski Co., Quebec. It is a great pleasure to associate with this species the name of one of the writer's companions in collecting the type-material and for years his companion on many memorable botanical explorations of northern Maine and eastern Quebec, Emile Francis Williams. This species is, therefore, called

ROSA Williamsii, n. sp., caulibus 3–5 dm. altis, adultis inermibus vel sparse setosis purpurascens; ramulis inermibus glabris; stipulis dilatatis adnatis 1–2 cm. longis subtus glanduloso-pulverulentis valde glanduloso-ciliatis, laminis liberis semiovatis; petiolis rhachibusque glanduloso-pulverulentis -setulosisque; foliis 5–7 plerumque 7 cuneato-obovatis apice plerumque rotundatis vel subtruncatis supra mediam argute simpliciter vel dupliciter serratis utrinque breviter pilosis subtus in nervis glandulosis 1–3.5 cm. longis; floribus solitariis vel binis; pedicellis 1–1.5 cm. longis glabris; hypanthio glabro ovoideo in anthesin 3.5–4.5 mm. diametro; fructibus pyri-

formibus basi attenuatis succulentis 1.1–1.3 cm. longis 7–8 mm. crassis; sepalis lanceolato-ovatis dorso laevibus vel pilosis plus minusve glanduloso-ciliatis sub anthesin arcte reflexis persistentibus, laminis 5–7 mm. longis, appendiculo foliaceo glanduloso-ciliato 4–8 mm. longo; petalis roseis 1.7–2 cm. longis; stylis distinctis persistentibus nec exsertis; achaeniis basilaribus parietalibusque.

Stems 3–5 dm. high; the adult unarmed or sparsely setose, purplish: branchlets unarmed, glabrous: stipules dilated, adnate, 1–2 cm. long, glandular-pulverulent beneath, conspicuously glandular-ciliate; the free blades semi-ovate: petiole and rhachis glandular-pulverulent and -setulose: leaflets 5–7, mostly 7, cuneate-obovate, chiefly rounded or subtruncate at summit, coarsely and simply or doubly serrate above the middle, short-pilose on both surfaces, glandular on the nerves beneath, 1–3.5 cm. long: flowers solitary or paired: pedicels 1–1.5 cm. long, glabrous: hypanthium glabrous, ovoid, in anthesis 3.5–4.5 mm. in diameter; in fruit becoming pyriform with attenuate base, succulent, 1.1–1.3 cm. long, 7–8 mm. thick: sepals lance-ovate, smooth or pilose on the back, more or less glandular-ciliate, after anthesis tightly reflexed and persistent; the blades 5–7 mm. long; the foliaceous glandular-ciliate appendage 4–8 mm. long: petals roseate, 1.7–2 cm. long: styles distinct, persistent, not exserted: achenes borne at the base and on the walls of the hypanthium.—QUEBEC: abundant on dry calcareous ledges, Cap Enragé, Bic, Rimouski Co., July 8, 1905, *Williams, Collins & Fernald* (TYPE in Gray Herb.).

A very distinct shrub, differing from *R. blanda* Ait. and *R. acicularis* Lindl. in the tightly reflexed very short sepals and very small hypanthium and fruit; from *R. virginiana* in the small smooth sepals and smooth fruits, the parietal achenes, pubescent foliage, etc., and from *R. johannensis*, described above, in the much smaller flowers and small pyriform fruit, very glandular stipules, petiole and rhachis and pubescent more cuneate leaflets. At the type locality *R. Williamsii* occurred on dry calcareous ledges with *Woodsia oregana* D. C. Eaton, *Draba stylaris* J. Gay, *Arabis Collinsii* Fernald and other calcicolous xerophytes.

GRAY HERBARIUM.